



POLITECNICO
MILANO 1863

DIPARTIMENTO DI
ARCHITETTURA,
INGEGNERIA DELLE
COSTRUZIONI
E AMBIENTE COSTRUITO



Τμήμα Επιστήμης Υπολογιστών
Πανεπιστήμιο Κρήτης



FORTH

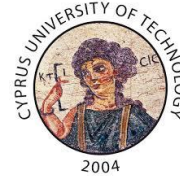
Foundation for Research & Technology - Hellas



Carleton
UNIVERSITY



ARISTOTLE
UNIVERSITY OF
THESSALONIKI



Politecnico di Milano, dABC-PhD Course (19-22 July, 2016)

***Surveying Modelling Monitoring Management BIM-GIS based:
Cultural Heritage & Built Environment, R. Brumana***

R. Brumana, L. Barazzetti, D. Oreni

Politecnico di Milano – DABC

Built Environment and Cultural Heritage

From surveying to BIM-GIS data content integration

Mario Santana Quintero

Carleton University - Ottawa Ca

Heritage Documentation and Assessment

George Papagiannakis

University of Crete and Foundation for Research & Technology – Greece

Mixed Reality and Gamification for Cultural Heritage

Martha Vassiliadi

Aristotle University of Thessaloniki – Greece

Mixed Reality Simulations inspired by European Literature

Branka Cuca

Cyprus University of Technology - Cyprus

Societal Challenges, Copernicus Programme Opportunities & Archaeolandscape

> Lectures

> On Site Surveying, data acquisition and interpretation

> Hands on Sessions

Technical subjects: Integrated surveying techniques, 3D Object and Image content reconstruction, UAV-APR, scan to BIM-BHIMM, Data Hub, Open Data Access and Brokering System, Geoportal, Multispectral data processing, Satellite and in situ data acquisition for Built Environment and Archeo-landscape, Mixed Reality, Gamification

Detailed Programme and Dates

Tuesday 19/7	Wednesday 20/07	Thursday 21/07	Friday 22/07
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Classroom	"Cà Granda" - Università Statale di Milano	Classroom	Classroom
Architectural Heritage: from Surveying to BIM and to AR	On-site session: surveying, instruments and techniques	Theory turned into practice: 3D image, VR/AR, BIM-GIS	Built Environment and Geographic Domain

9.15	10.15	Introduction to the course and presentation of the Lectures	<p>Instruments and techniques:</p> <p>Laser scanning (TLS)</p> <p>3D reconstruction and texture mapping from multispectral images</p> <p>... and other "geodetic equipment"</p> <p>...including students' low cost technologies: cameras turned into measuring tools</p>	<p>Students hands on: 3D image processing related to the case study</p>	Built Environment and Earth Observations (Satellite, Sentinel Data and in-situ data collection). Geoinformation EU policies and communities: Copernicus programme, GEO, societal benefit challenges. NEREUS-The Network of the EU regions for the Use of Space Data). (B. Cuca, CUT, Cyprus)
10.15	11.15	HBIM-BHIMM: What, How and for What? Modelling complexity, unicity and content: enriched BIM. Reverse/mixed LOD approach. Vaulted systems (R. Brumana, Polimi)			Remote Sensing for Built Heritage Monitoring: Archaeolandscape; the Athena project (H2020, CSA). (B. Cuca, CUT, Cyprus)
11.15	12.15	Heritage Documentation (M. Santana Quintero, Carleton University, Ottawa, Ca)			ENERGIC OD (Eu CIP ICT). Virtual Hub based OD access (WMS, WMTS, WFS, catalogues). GEOSS - GEODAB Big Data Discovery and Access. (M. Previtali, Polimi, and B. Cuca CUT, Cyprus)

12.15	13.15	Mixed Reality and Gamification for Cultural Heritage (G. Papagiannakis, University of Crete and Foundation for Research & Technology, Hellas, GR)			Hands on session: Supporting Built Environment analysis: ENERGIC OD Geopan APP to access Open source geoportal, multi-temporal open data (historical maps, and other geospatial data coming from satellite services and shp files) (M. Previtali, Polimi, and B. Cuca CUT, Cyprus)
14.15	16.15	The case study: history and volumetric stratigraphic analysis (D. Oreni, Polimi)		How to create The BIM of the Case study: the Ice House of Cà Granda (F. Banfi, Polimi, G. Karimi, Carleton)	Discussion: Student hands on presentation
16.15	18.15	Photogrammetry for Cultural Heritage (L. Barazzetti, Polimi)		Mixed Reality simulations inspired by European Literature and mobile AR/VR rendering and animation in gamified heritage sites (M. Vassiliadi & G. Papagiannakis) ... demo with virtual reality tools	

The following Students will join the PhD Course Programme in addition to dABC phd Students:

Davide Mezzino – PhD Candidate (Carleton University)

Golnaz Karimi – Graduated Master of Science (Carleton University) – SHRCC Carleton-Polimi programme
Internship student

Lore Van Meerbeek (KUL LEven Be) – Internship RLICC Master after Master thesis student

Matteo Del Buono - Eurac Research

Case study: "Ca Granda" Università Statale di Milano (Via Festa del Perdono, Milan)

